

# SERVICE MANUAL

AUTOMATIC DIRECT DRIVE TURNTABLE

## SANSUI P-D20/D10



*Sansui*

SANSUI ELECTRIC CO., LTD.

### • SPECIFICATIONS

#### • P-D20

Type	Two-speed direct-driven
Speeds	33-1/3, 45 rpm
Platter	Aluminum alloy die-cast 304 mm (12") diameter
Motor	FG Servo DC Motor
Wow and flutter	0.038 % (W.R.M.S.)
S/N	Better than 60 dB (IEC-B)
Rumble	Better than 72 dB (DIN-B)
Tonearm	
Tonearm length	220 mm (8-11/16")
Overhang	17.5 mm (3/4")
Applicable cartridge weight	4 to 9 g
Dimensions	430 mm (16-29/32") W 120 mm (4-23/32") H 360 mm (14-3/16") D
Weight	4.2 kg (9.3 lbs.) net 5.0 kg (11.0 lbs.) packed
Power consumption	11 W

- The power voltage is adjusted to the one of the area where you bought the unit.

Specifications of the cartridge (applicable only to the units with cartridge)

#### Model SC-37A

Type	Induced magnet
Frequency response	20 ~ 20,000 Hz
Output voltage	3.5 mV per channel (1,000 Hz, 50 mm/sec)
Load impedance	47 kΩ
Tracking force	2.5 g
Stylus	0.5 mil, diamond spherical (SN-37A)

#### • P-D10

Type	Two-speed direct-driven
Speeds	33-1/3, 45 rpm
Platter	Aluminum alloy die-cast 304 mm (12") diameter
Motor	FG Servo DC Motor
Wow and flutter	0.038 % (W.R.M.S.)
S/N	Better than 60 dB (IEC-B)
Rumble	Better than 72 dB (DIN-B)
Tonearm	
Tonearm length	220 mm (8-11/16")
Overhang	17.5 mm (3/4")
Applicable cartridge weight	4 to 9 g
Dimensions	430 mm (16-29/32") W 120 mm (4-23/32") H 360 mm (14-3/16") D
Weight	4.1 kg (9.0 lbs.) net 4.9 kg (10.8 lbs.) packed
Power consumption	10 W

- The power voltage is adjusted to the one of the area where you bought the unit.

Specifications of the cartridge (applicable only to the units with cartridge)

#### Model SC-37A

Type	Induced magnet
Frequency response	20 ~ 20,000 Hz
Output voltage	3.5 mV per channel (1,000 Hz, 50 mm/sec)
Load impedance	47 kΩ
Tracking force	2.5 g
Stylus	0.5 mil, diamond spherical (SN-37A)

\* Design and specifications subject to change without notice for improvements.

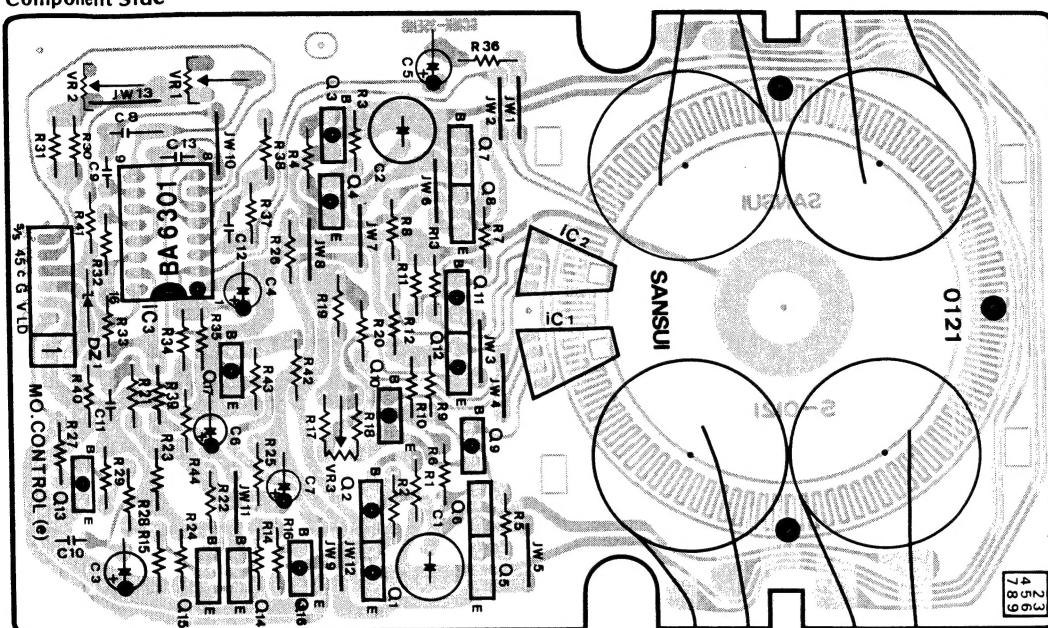
# 1. PARTS LOCATION & PARTS LIST

• Since some of capacitors and resistors are omitted from parts lists in this Service Manual, refer to the Common Parts List for capacitors & resistors, which was appended previously to Sansui Manual.

- Note: The circuit boards, S-0121, S-0125, S-0149, S-0150 & S-0123 are not supplied as the assembled. However, individual parts on the circuit board are provided by orders.

## 1-1. S-0121 Motor Control Circuit Board <P-D10/D20>

Component Side

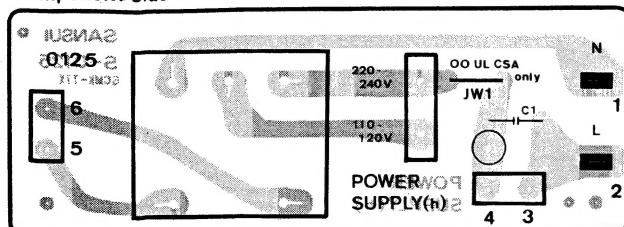


Parts List

Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	Parts No.	Stock No.	Description	
•Transistor			eQ13	46367402	2SA733A	•Zener Diode	eDZ1	46113900	05Z12-Y
eQ1	46359701	2SA952		46367001	2SA1115				
eQ2	46359701	2SA952		46367201	2SA1048		eR41	00205500	240kΩ 0.1W M.R.
eQ3	46359701	2SA952	eQ14	46367502	2SC945A		eC1	08451100	22μF 16V E.B.
eQ4	46359701	2SA952		46367101	2SC2603		eC2	08451100	22μF 16V E.B.
eQ5	46359801	2SC2001		46367301	2SC2458		eC10	07216600	47000pF 25V C.C.
eQ6	46359801	2SC2001	eQ15	46367502	2SC945A		eC11	07216600	47000pF 25V C.C.
eQ7	46359801	2SC2001		46367101	2SC2603		eC12	07211700	1000pF 25V C.C.
eQ8	46359801	2SC2001	eQ16	46149301	2SB744-Q		eC13	07211700	1000pF 25V C.C.
eQ9	46367401	2SA733A	eQ17	46367402	2SA733A		eVR1	46366600	100kΩ (B) S.V.R., speed selector, 33-1/3 rpm
or 46367001	2SA1115			46367001	2SA1115		eVR2	07241700	200kΩ (B) S.V.R., speed selector, 45 rpm
or 46367201	2SA1048			46367201	2SA1048		eVR3	07241000	1kΩ (B) S.V.R., wow & flutter
eQ10	46367401	2SA733A	•IC	eIC1	46354301	H-300BC			
or 46367001	2SA1115				46354302	H-300BC			
or 46367201	2SA1048		eIC2	46354301	H-300BC				
eQ11	46367401	2SA733A			46354302	H-300BC			
or 46367001	2SA1115		eIC3	46354400	BA6301				
or 46367201	2SA1048								
eQ12	46367401	2SA733A							
or 46367001	2SA1115								
or 46367201	2SA1048								
or 46367000	2SA1115								

## 1-2. S-0125 Power Supply Circuit Board <P-D10>

Component Side

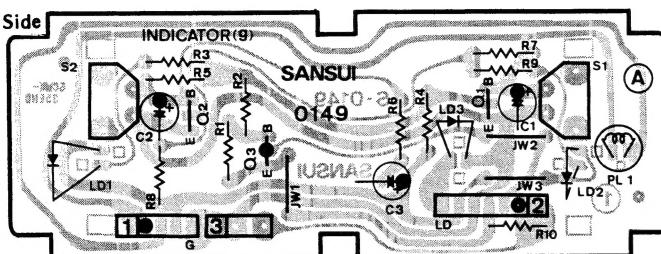


Parts List

Parts No.	Stock No.	Description
hC1	08302600	10000pF 400V C.C.
hT1	15007701	Power Transformer (XX)
	15007705	Power Transformer (EU, BS, AS)
	15007702	Power Transformer (UL, CS)

## 1-3. S-0149 Indicator Circuit Board &lt;P-D20&gt;

Component Side



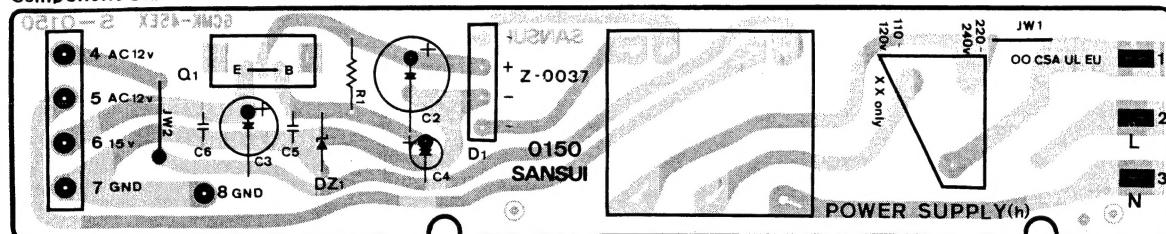
Parts List

Parts No.	Stock No.	Description
<b>Transistor</b>		
gQ1	07299701	2SC2603
or 03059501	2SC945	
or 07194801	2SC1815	
gQ2	07299701	2SC2603
or 03059501	2SC945	
or 07194801	2SC1815	
gQ3	07299601	2SA1115
or 07197001	2SA733A	
or 07194701	2SA1015	

Parts No.	Stock No.	Description
<b>LED</b>		
gLD1	46095200	TLR123
gLD2	46095200	TLR123
gLD3	07250900	TLG123
gPL1	46315900	Pilot Lamp 12V 1.5A
gSW1	46395900	Push SW. speed selector, 33 1/3 rpm
gSW2	46395900	Push SW. speed selector, 45 rpm

## 1-4. S-0150 Power Supply Circuit Board &lt;P-D20&gt;

Component Side



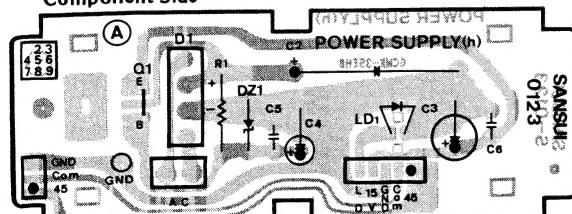
Parts List

Parts No.	Stock No.	Description
<b>Transistor</b>		
hQ1	03083902	2SD313AL
<b>Diode</b>		
hD1	03117000	RB-152
<b>Zener Diode</b>		
hDZ1	46104500	05Z16

Parts No.	Stock No.	Description
<b>Resistor</b>		
hR1	00181300	2.2kΩ 1W N.I.R.
hC5	07213600	22000pF 25V C.C.
hC6	07213600	22000pF 25V C.C.
hT1	15008901	Power Transformer (XX)
	15008905	Power Transformer (EU, BS, AS)
	15008902	Power Transformer (UL, CS)

## 1-5. S-0123 Power Supply Circuit Board &lt;P-D10&gt;

Component Side



Parts List

Parts No.	Stock No.	Description
<b>LED</b>		
gLD1	07250900	TLG123
<b>Diode</b>		
hD1	03117000	RB-152

Parts No.	Stock No.	Description
<b>Zener Diode</b>		
hDZ1	46104500	05Z16-X
hR1	00181300	2.2kΩ 1W N.I.R.
hC2	46368700	470μF 25V
hC5	07213600	22000pF 25V C.C.
hC6	07213600	22000pF 25V C.C.

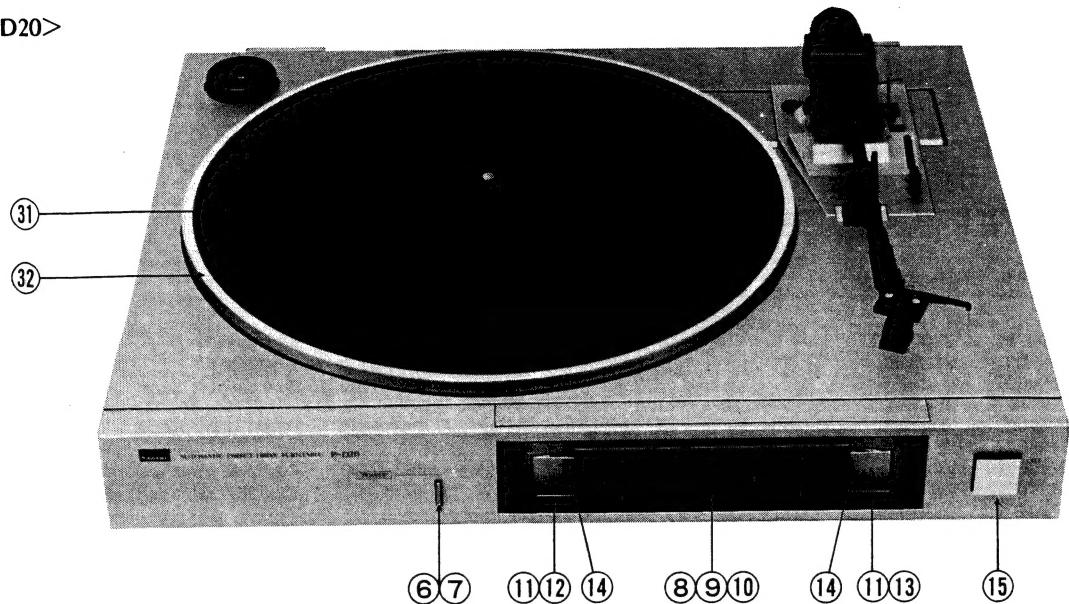
## Abbreviations

C.R.	: Carbon Resistor	E.B.	: Bi-Polar Electrolytic Capacitor
S.R.	: Solid Resistor	E.B.L.	: Low Leak Bi-Polar Electrolytic Capacitor
Ca.R.	: Cement Resistor	Ta.C.	: Tantalum Capacitor
M.R.	: Metal Film Resistor	F.C.	: Film Capacitor
F.R.	: Fusing Resistor	M.P.	: Metallized Paper Capacitor
N.I.R.	: Non-Inflammable Resistor	P.C.	: Polystyrene Capacitor
C.C.	: Ceramic Capacitor	G.C.	: Gimmic Capacitor
C.T.	: Ceramic Capacitor, Temperature Compensation	V.R.	: Variable Resistor
E.C.	: Electrolytic Capacitor	S.V.R.	: Semi Variable Resistor
E.L.	: Low Leak Electrolytic Capacitor	SW.	: Switch

## 2. OTHER PARTS

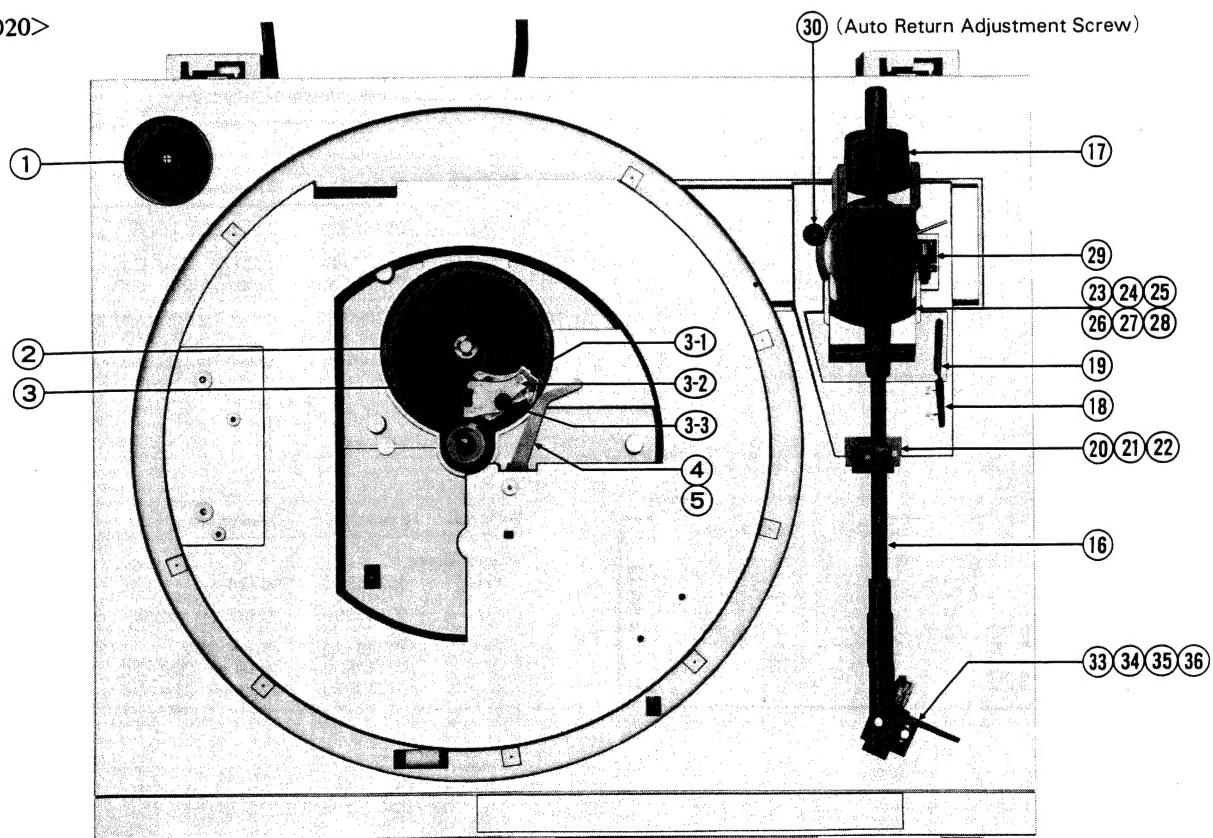
### 2-1. Front View

&lt;P-D20&gt;



### 2-2. Top View

&lt;P-D20&gt;



## 2-3. Bottom View

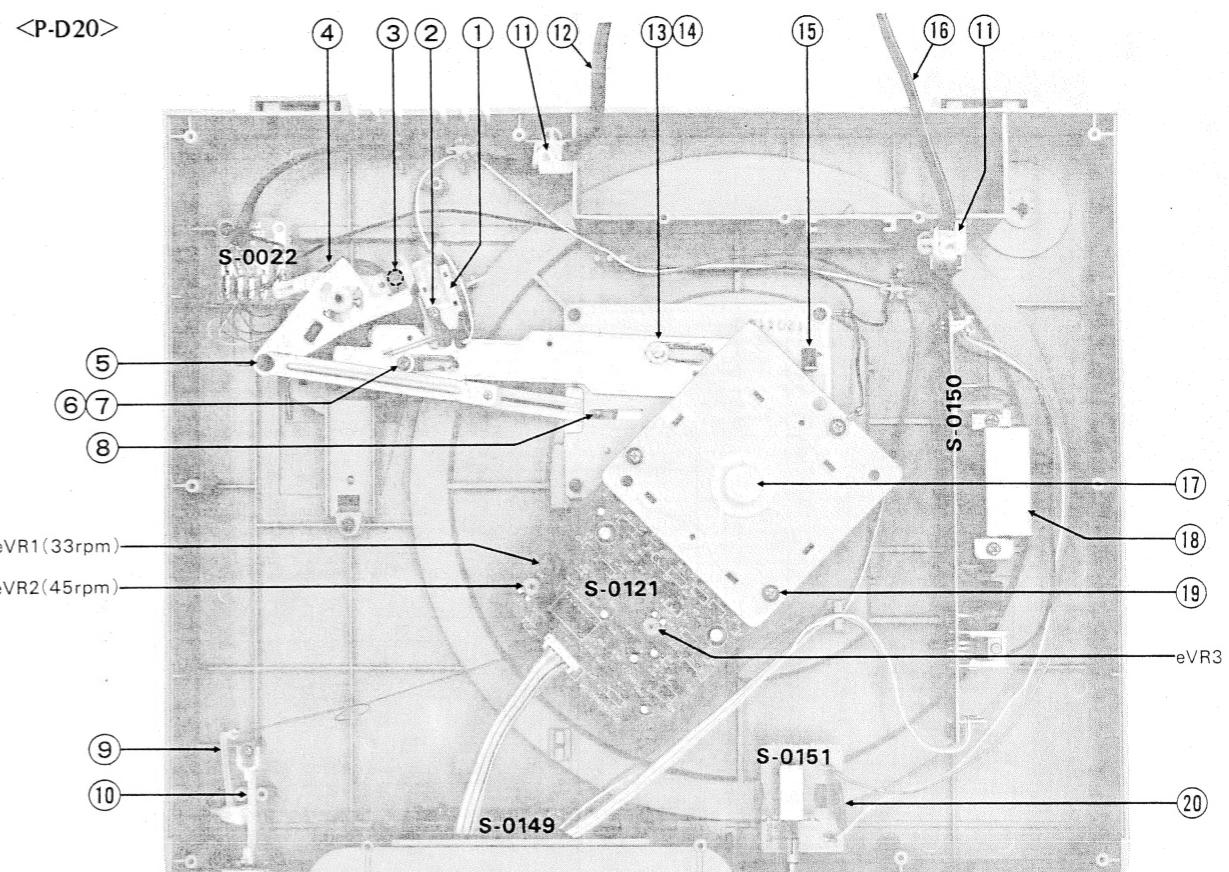
Parts List &lt;Front View/Top View&gt; (P-D10/P-D20)

Parts No.	Stock No.	Description
1	13012300	45 r.p.m. Adaptor
2	00489400	E Ring 5φ, main gear
3	13017200	Main Gear
3-1		Lower Trip
3-2		Upper Trip
3-3	51822900	CS Type Washer, 3φ
4	13136400	Reject Arm
5	13143400	Tension Spring, reject arm
6	46368500	Speed SW. <P-D10 only>
	46364300	Power SW. <P-D20 only>
7	07910900	Push SW. Knob (Silver)
	07911000	Push SW. Knob (Black)
8	13145400	Indicator Case Cover <P-D10 only>
	13166500	Indicator Case Cover <P-D20 only>
9	13145900	Indicator Plate (Silver) <P-D10 only>
	13146000	Indicator Plate (Silver) <P-D20 only>
	13169100	Indicator Plate (Black) <P-D10 only>
	13169200	Indicator Plate (Black) <P-D20 only>
10	13164300	Indicator Holder <P-D20 only>
	13145800	Indicator Holder <P-D20 only>
11	46395900	Push SW., speed selector <P-D20 only>
12	07926300	Speed SW. Knob, 45 r.p.m. (H) <P-D20 only>
13	07926400	Speed SW. Knob, 33 r.p.m. (L) <P-D20 only>
14	07962600	Cushion, speed SW. <P-D20 only>
15	13142100	Reject Knob (Silver)
	13142200	Reject Knob (Black)
16	13176300	Tone Arm Ass'y <P-D10 only>
	13176500	Tone Arm Ass'y <P-D20 only>
17	13176700	Main Weight Ass'y
18	13013500	Lifter Knob
19	13138300	Lifter Lever Ass'y
20	13138700	Arm Rest (Black)
21	13138500	Fook, arm rest (Black)
22	13167700	Bind Tapping Screw, 2 x 5
23	13138200	Lifter Plate
24	13035600	Spring, 5.3φ x 10 mm (C)
25	13035700	Spring, 9.3φ x 14 mm (E)
26	00466500	P Type Washer 3φ x 10
27	13011600	Elevation Chip
28	13038010	B Type Tapping Screw M3 x 16
29	13141800	IFC Ass'y <P-D20 only>
30	50624800	Cup for auto return adjustment
31	13140800	Rubber Mat, platter
32	13147200	Platter
33	13176600	Head Shell Ass'y
34	13190700	Cartridge
35	13190800	Stylus, SN-37A
36	51921500	Screw Ass'y
	13142400	Dust Cover Ass'y
	13142600	Auto Hinge, dust cover ass'y

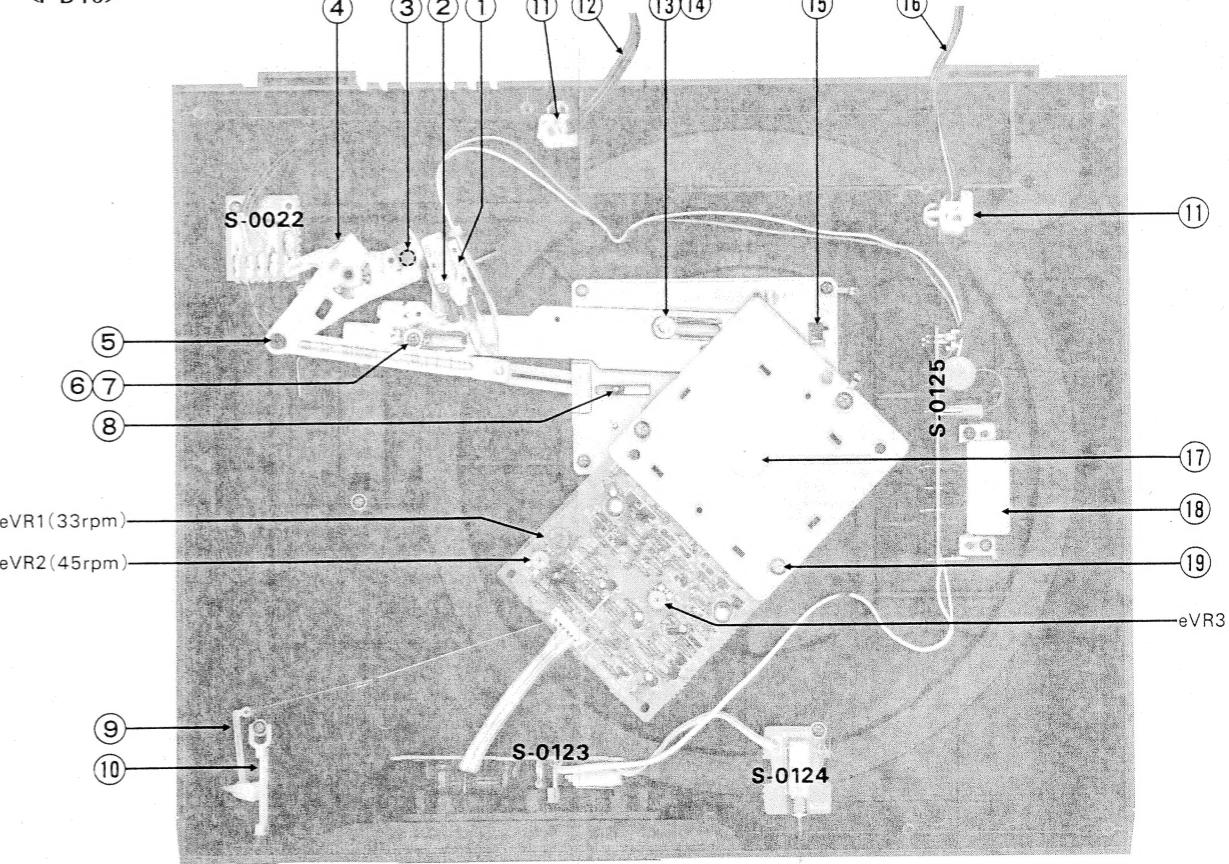
Parts List &lt;Bottom View&gt; (P-D10/P-D20)

Parts No.	Stock No.	Description
1	11602500	Micro Switch
2	13143700	Screw, micro switch
3	13038010	Pan Head Tapping Screw M3 x 16 (Adjusting Screw)
4	69034400	Spring, PU plate
5	13143000	Push Pin
6	13038200	Screw, slide arm
7	00467100	P Type Washer 5φ x 10 x 1.0
8	13051900	Steel Ball 5φ
9	13136700	Reject Lever (3)
10	13038300	Reject Lever (1)
11	07254700	Strain Relief
12	13154300	Output Cord
13	00489300	E Ring 4φ
14	00467100	P Type Washer 5φ x 10 x 1.0
15	69034300	Spring, slide arm
16	46413200	Power Cord (XX, CS)
	07204200	Power Cord (AS)
	38004300	Power Cord (BS)
	38004500	Power Cord (EU)
	38004700	Power Cord (UL)
17	18028700	DD Motor Ass'y, SSD703A with control circuit board, S-0121
18	15008901	Power Transformer <P-D20> (XX)
	15008905	Power Transformer <P-D20> (EU, BS, AS)
	15008902	Power Transformer <P-D20> (UL, CS)
	15007701	Power Transformer <P-D10> (XX)
	15007705	Power Transformer <P-D10> (EU, BS, AS)
	15007702	Power Transformer <P-D10> (UL, CS)
19	08320700	Brazier Head Tapping Screw, 4 x 12
20	00386000	10000pF 150V C.C. <P-D20> (XX)
	08302600	10000pF 400V C.C. <P-D20> (EU, BS, AS)
	08302200	10000pF 400V C.C. <P-D20> (UL, CS)
	13153500	Insulator

&lt;P-D20&gt;



&lt;P-D10&gt;



## ● Note 1:

As to UL, CSA, BS, ES, AS and xx marked in the Parts Lists, note the followings:

UL, CSA . . . Parts used in the unit which is applicable to the USA and Canada under industrial standards.

BS . . . Parts used in the unit which is applicable to British under industrial standards.

EU . . . Parts used in the unit which is applicable to Sweden, Denmark, Norway, Finland, West Germany, and Switzerland under industrial standards.

AS . . . Parts used in the unit which is applicable to Australia under industrial standards.

XX . . . Parts used in the unit which is applicable to other countries excepting mentioned above.

\* In this parts list, those parts with no above mark in the place of Description are all the same as XX marked parts.

## ● Note 2:

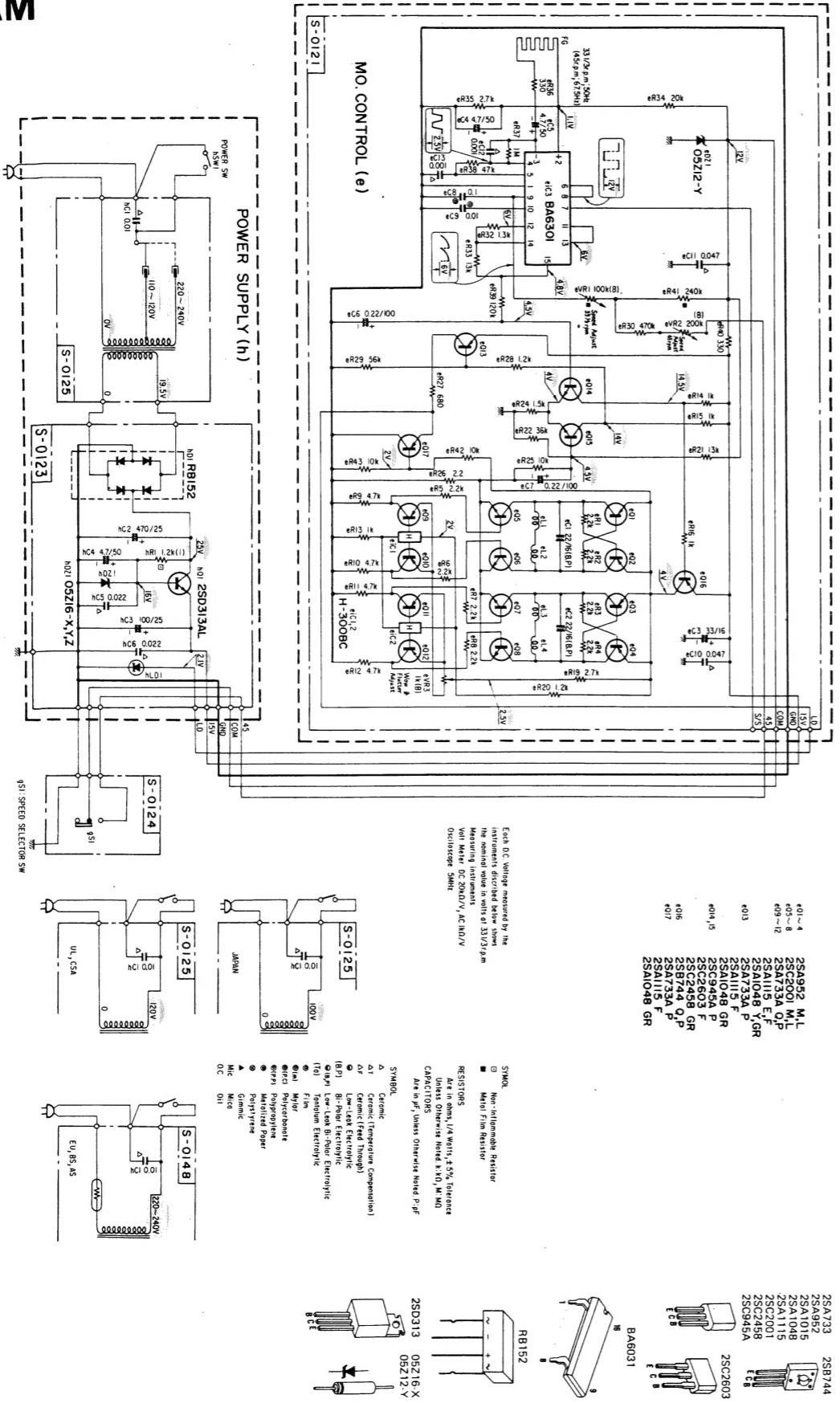
Please note that this unit, P-D20/D10, includes a cartridge or not depending on the cabinet color and the unit sold in specific area shown in the above description.

Model	Cabinet Color	Cartridge	Indication of Carton Case
XX, UL, EU, BS, AS	Silver	With Cartridge	Silver
XX, UL, EU, BS, AS	Black	With Cartridge	Black
XX, UL, CSA, BS	Silver	Without Cartridge	Silver, (E)
XX, UL, CSA, BS	Black	Without Cartridge	Black, (E)

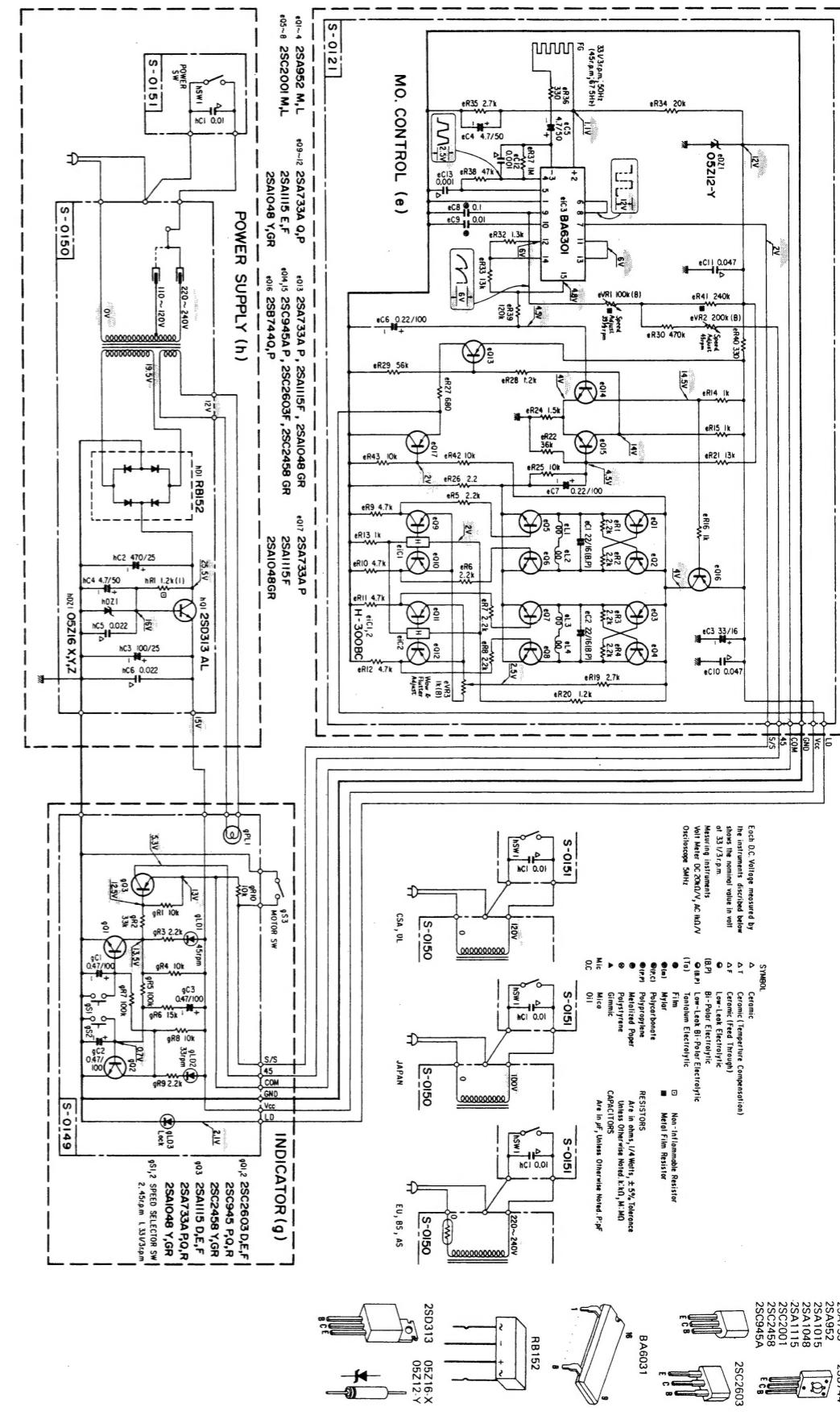
(Cartridge, Stylus, Stylus Cover, and Screw Ass'y are not included in the unit stamped (E) on carton case.)

### 3. SCHEMATIC DIAGRAM

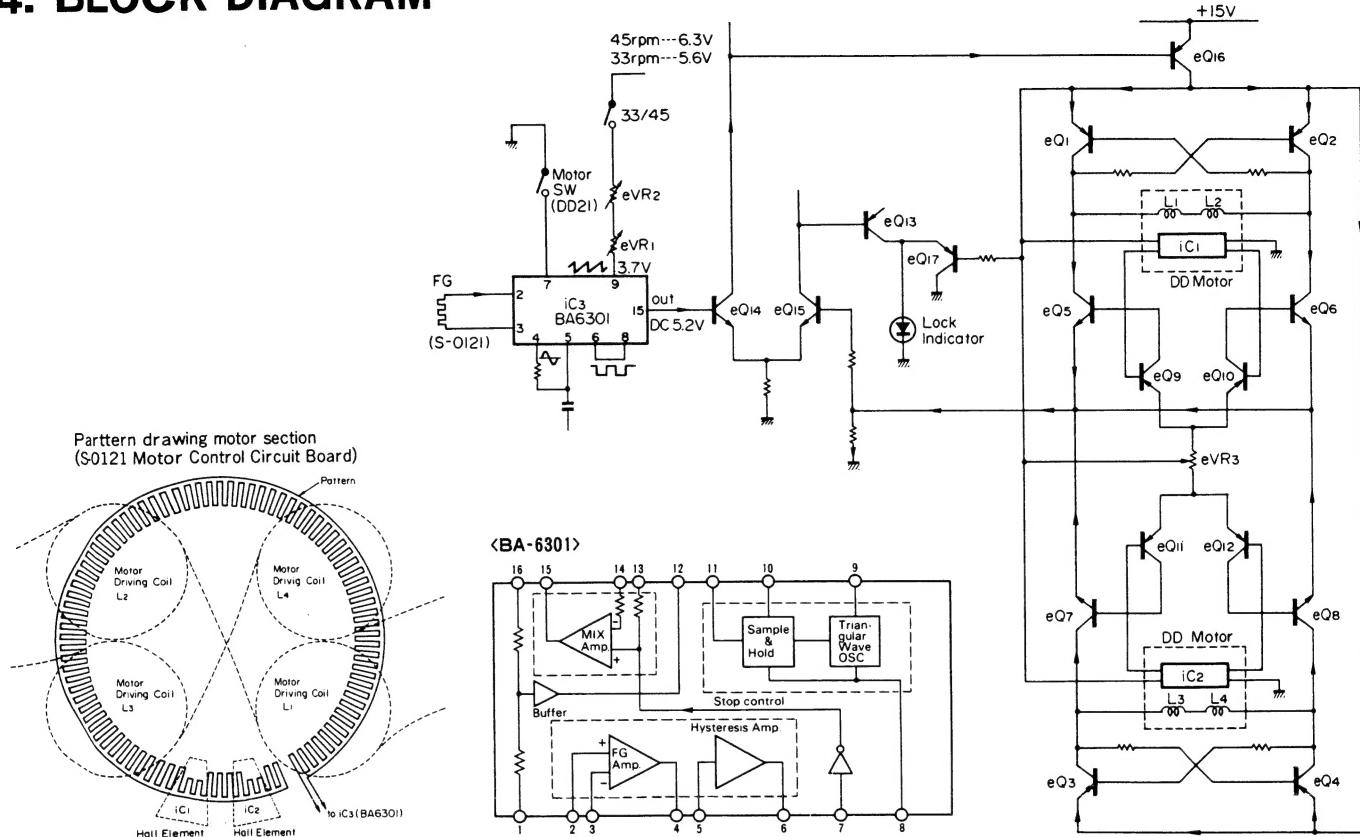
P-D10



### 3-2. P-D20



## 4. BLOCK DIAGRAM



## 5. ADJUSTMENTS

### 5-1. Adjustment of the Auto Return

- 1) The adjusting screw in top view is one to adjust the position of Auto Return when stylus reaches lead-out groove.
- 2) Make adjustment of the screw in such a way that stylus lifts up automatically around the middle way of lead-out groove. Namely turn the adjusting screw clockwise for leading and counterclockwise if for lagging.
- 3) After adjusting the screw properly, check its operation a few times.

### 5-2. Adjustment of the Clearance between PU plate and Micro Switch

After replacing the micro switch, adjust the clearance between PU plate and micro switch (See Fig. 5-1) to be approximately 0.3 mm at the tonearm on the arm rest by the clearance adjusting cam.

### 5-3. Adjustment of the main gear

When the main gear makes abnormal mechanical noise caused by touching to the pinion gear during playing record disc, adjust its position with cam 2 to make even clearance between the circular arc portion of the main gear and the pinion gear.

### 5-4. Adjustment of cartridge mounting position

Adjust the cartridge mounting position as shown in Fig. 5-2.

Fig. 5-1

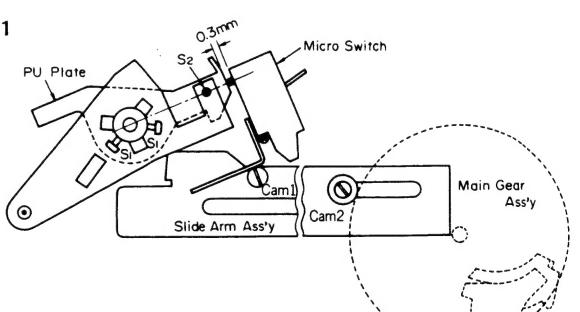
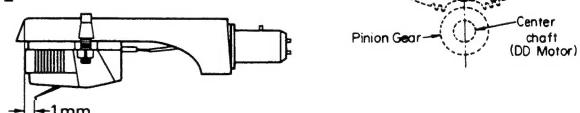


Fig. 5-2



### 5-5. Speed Adjustment

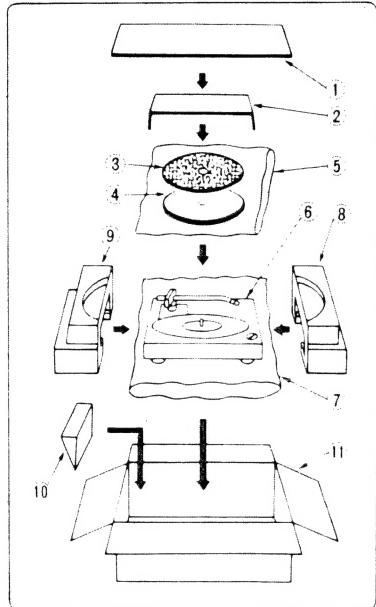
- See Bottom View on page 4.

STEP	SPEED SELECTOR	ADJUST	ADJUST FOR
1.	33-1/3 r.p.m. (S-0121)	kVR1 (S-0121)	Strobo marking pattern appears to stand still.
2.	45 r.p.m. (S-0121)	kVR2 (S-0121)	Same as above

Note: Set kVR3 (S-0121) center position.

## 6. PACKING LIST

Parts No.	Stock No.	Description
1	—	Protector Board, upper
2	—	Protector Board, platter
3	13140800	Turntable sheet
4	13147200	Platter, turntable
5	91166000	Polyethylene Bag for Platter
6	—	Turntable Unit
7	91122710	Polyethylene Bag for turntable unit
8	13170400	Styrofoam Packing, front
9	13170500	Styrofoam Packing, rear
10	—	Accessory Box
11	13165100	Carton Case (Silver) <P-D20>
	13168500	Carton Case (Black) <P-D20>
	13146200	Carton Case (Silver) <P-D10>
	13146300	Carton Case (Black) <P-D20>



## 7. ACCESSORY LIST

Stock No.	Description
46358300	Operating Instruction <P-D10>
46397000	Operating Instruction <P-D20>
13190700	Cartridge, SC-37A
13190800	Stylus, SN-37A
51921500	Screw Ass'y

- Note: There are two types of units in P-D20/D10

1) The unit with a cartridge

2) The unit without a cartridge

The mark (E) is stamped on the side of carton case.

- In particular area, either type of these unit is sold.

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**Sansui**